

REMARKS

Claims 1, 8 and 34 are amended. Claim 17 is cancelled. Claim 65 is added. Claims 1, 2, 4-14, 16, 18-25, 34-42, 44-51 and 65 are in the application for consideration.

The specification is amended to correct typographical errors. The claim 1 rejection raised by the Examiner is obviated by an amendment made to claim 1 herein, as requested by the Examiner. The same subject amendment was also made to claim 34.

Independent claims 1 and 34 stand rejected as being anticipated by U.S. Patent No. 6,054,379 to Yau et al. Claims 1 and 34 have been amended to recite that the subject exposing occurs without depositing more of said dielectric layer. Support for the same is inherent from Applicant's application as filed. For example, p.10, lns.16-19, in reference to Fig. 2, clearly teaches that the illustrated layer 30 after it has been formed is subjected to the exposing. The Examiner relies upon Yau et al. as teaching Applicant's previously claimed "exposing" as Yau et al. teaches plasma enhanced chemical vapor deposition (PECVD) involving an oxygen containing material and that thereby the stated "exposing" of Applicant's claims 1 and 34 occurs. Yet, there is no disclosure or suggestion that a dielectric layer being deposited, by plasma enhanced chemical vapor deposition involving an oxygen containing material, will have its dielectric constant reduced by at least 10% below what it was prior to the exposing. Clearly, Applicant's claims did not encompass or contemplate the Examiner's interpretation relative to Yau

1 et al., as Applicant, in its very disclosure, also disclosed as a preferred  
2 method of forming the interlevel dielectric layer PECVD involving an  
3 oxygen containing material. *See for example*, p.6, ln.24 - p.7, ln.3, and  
4 p.7, lns.13-15. Accordingly, Applicant's application as filed clearly  
5 contemplates that which is now positively recited by amendment in  
6 claims 1 and 34, namely that the exposing referred to is that after  
7 formation of the dielectric layer.

8 Yau et al. is interpreted to disclose alleged exposure under the  
9 Examiner's interpretation to an oxygen containing material only during  
10 deposition. There is absolutely no teaching or suggestion within Yau et  
11 al. of conducting the exposings of Applicant's claims 1 and 34 to a  
12 plasma comprising oxygen after the dielectric layer has been formed and  
13 without depositing more of the dielectric layer during the exposing.  
14 Further, there is absolutely no teaching or suggestion within Maeda et  
15 al. that exposing a previously formed interlevel dielectric layer consisting  
16 essentially of  $(CH_3)_xSiO_y$  to an oxygen containing plasma would have  
17 any effect on the dielectric constant, let alone the minimum specific  
18 magnitude lowering which Applicant recites in claims 1 and 34.  
19 Accordingly, Applicant's independent claims 1 and 34 as presented are  
20 not anticipated or rendered obvious by the Yau et al. reference when  
21 taken alone. Accordingly, the Examiner's §102 rejection in this regard  
22 must be withdrawn, and action to that end is requested. Further, the  
23 §102 rejections of the various dependent claims over this reference  
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likewise should be withdrawn as such claims depend from base claims not properly rejectable under §102.

Independent claims 1 and 34 also stand rejected over a combination of Yau et al. and Maeda et al. With respect to claim 1, such has been amended to recite that the subject interlevel dielectric layer consists essentially of  $(\text{CH}_3)_x\text{SiO}_y$ . Maeda et al. apparently discloses lowering the dielectric constant of a fluorine containing silicon oxide film by exposure to oxygen plasma. Applicant's amendment to claim 1, in this regard to "consisting essentially of", by definition precludes appreciable inclusion of fluorine or any other material in such layer. Support for the same is inherent from Applicant's application as filed, for example, at claim 17 which is cancelled herein. There is no disclosure or suggestion within the Maeda et al. document that a film consisting essentially of  $(\text{CH}_3)_x\text{SiO}_y$  would have its dielectric constant reduced by exposure to an oxygen containing plasma. Yau et al. is equally silent in this regard, where more of the dielectric layer is not being deposited, as is a limitation in claim 1.

Claim 1 further recites that the subject exposing occurs in the chamber within which the chemical vapor depositing occurs. Maeda et al. clearly teaches forming of the subject layer in one chamber and then performing the oxygen plasma treatment in another after the forming. (See for example, col.5, lns.41-44). As neither of the relied upon references in this rejection disclose a subject treatment in the same chamber within which the depositing occurs, and after the depositing has

1 been completed, the combination of references clearly cannot suggest  
2 Applicant's amended claim 1. Accordingly, the rejection is seen to be  
3 overcome, and claim 1 should be allowed. Action to that end is  
4 requested.

5 The same essential argument applies with respect to the  
6 allowability of claim 34. Accordingly, formal allowance of claim 34 as  
7 amended is requested.

8 The claims depending from independent claims 1 and 34 which  
9 have been rejected over a combination of Yau et al. and Maeda et al.  
10 should be allowed as depending from an allowable base claim and for  
11 their own recited features which are neither shown nor suggested in the  
12 cited art.

13 Independent claim 1 as previously submitted stood rejected as  
14 being obvious over Brinker et al. Claim 1 is amended to recite  
15 chemical vapor depositing within a chamber, with subsequent treatment  
16 occurring in the same chamber. Brinker et al. is not directed to a  
17 chemical vapor deposition process, and accordingly could not suggest  
18 conducting the subject "exposing" which Applicant claims in any chemical  
19 vapor deposition chamber, let alone the same one within which the  
20 deposition occurs on a subject substrate. Accordingly, the rejection of  
21 claim 1 over Brinker et al. should be withdrawn, as well as that with  
22 respect to the subject dependent claims over Brinker et al., and action  
23 to that end is requested.  
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1 The Examiner's double patenting rejection with respect to claim 17  
2 is effectively obviated by the cancellation of such claim. Applicant  
3 disagrees with the propriety of such objection. Independent claim 1  
4 initially recited "comprising", whereas claim 17 recited "consisting  
5 essentially of". The word "comprising" and the phrase "consisting  
6 essentially of" are not substantial duplicates as the Examiner asserts, and  
7 have respective legal meanings which are not the same. Further, the  
8 Examiner could have made the same rejection with respect to dependent  
9 claim 45 and its independent claim 34, where the same issue is  
10 presented and would remain, as both claims 34 and 45 are still in the  
11 application. The double patenting rejection/objection over these two  
12 claims would be improper for reasons identified above.

13 New claim 65 is added, depends from claim 1, and is otherwise  
14 similar to claim 35. Accordingly, no new matter is added.

15 Reconsideration of the Examiner's provisional obviousness-type  
16 double patent rejections is requested in light of the amendments made  
17 herein.

18 This application is believed to be in immediate condition for  
19 allowance and action to that end is requested. If the Examiner's next  
20 anticipated action is to be anything other than a Notice of Allowance,  
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1 the undersigned respectfully requests a telephone interview prior to  
2 issuance of any such subsequent action.  
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4 Respectfully submitted,  
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6 Dated: 9-27-00

By: 

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